

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte SIMON J. DAVIS, TERENCE D. BUTTERS, GUNILLA B. KARLSSON,  
FRANCES M. PLATT, MARTIN L. BRYANT and RAYMOND A. DWEK

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Appeal No. 95-5069  
Application No. 08/202,055<sup>1</sup>

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ON BRIEF

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Before WINTERS, WILLIAM F. SMITH and LORIN, Administrative Patent Judges.

WINTERS, Administrative Patent Judge.

DECISION ON APPEAL

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<sup>1</sup> Application for patent filed February 23, 1994.

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This appeal was taken from the examiner's decision rejecting claims 1, 4, and 5, which are all of the claims remaining in the application.

REPRESENTATIVE CLAIM

Claim 1, which is illustrative of the subject matter on appeal, reads as follows:

1. A method for modifying the carbohydrate moiety on glycoproteins comprising:

- (a) treating glycoprotein-secreting CHO cells having low endomannosidase activity under cell maintenance conditions with N-butyl-deoxynojirimycin under non-denaturing conditions;
- (b) secreting and purifying the glycoprotein from the cells of step (a); and
- (c) treating the secreted and purified glycoprotein from step (b) with endoglycosidase H under non-denaturing conditions to provide a glycoprotein with a single GlcNAc residue at each glycosylation sequon, thereby facilitating the structural and functional analysis of said secreted and purified glycoprotein.

THE REFERENCES

In rejecting the appealed claims on non-prior art grounds, the examiner relies on these references:

Nadine Peyrieras et al. (Peyrieras), "Effects of the glucosidase inhibitors nojirimycin and deoxynojirimycin on the biosynthesis of membrane and secretory glycoproteins," 2 The EMBO Journal no. 6, 823-32 (1983)

Pedro A. Romero and Annette Herscovics (Romero), "Transfer of Nonglycosylated Oligosaccharide from Lipid to Protein in a

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Mammalian Cell," 34 The Journal of Biological Chemistry 15936-40 (Dec. 5, 1986)

Frances M. Platt et al. (Platt), "Modulation of cell-surface transferrin receptor by the imino sugar *N*-butyldeoxynojirimycin," 208 European Journal of Biochemistry no. 1, 187-93 (Aug. 92)

In rejecting the appealed claims on prior art grounds, the examiner relies on these references:

Fleet et al. (Fleet)	4,849,430	Jul. 18, 1989
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Po-Ying Chan and Timothy A. Springer (Chan), "Effect of Lengthening Lymphocyte Function-Associated Antigen 3 on Adhesion to CD2,  
3 Molecular Biology of the Cell 157-66 (Feb. 1992)

E. Yvonne Jones et al. (Jones), "Crystal structure at 2.8 Å resolution of a soluble form of the cell adhesion molecule CD2," 360 Nature 232-39 (Nov. 19, 1992)

## THE REJECTIONS

Claims 1, 4, and 5 stand rejected under 35 U.S.C. § 112, first paragraph, as based on a non-enabling disclosure. As evidence supporting this ground of rejection, the examiner relies on Peyrieras, Platt, and Romero. Claims 1, 4, and 5 further stand rejected under 35 U.S.C. § 103. As evidence supporting this ground of rejection, the examiner relies on the combined disclosures of Jones, Chan, and Fleet.

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On consideration of the record, we shall not sustain  
these rejections.

DISCUSSION

Claims 1, 4, and 5 stand rejected under 35 U.S.C. § 112, first paragraph, as based on a non-enabling disclosure. This rejection amounts to a requirement that the claims be limited to a method for modifying the carbohydrate moiety on CD2 glyco-proteins rather than "glycoproteins" generically. According to the examiner, any person skilled in the art to which the invention pertains "would not know how to use the claimed system for any glycoprotein other than CD2." See the Examiner's Answer, page 4, first full paragraph.

In support of that position, the examiner expresses a belief that some glycoproteins encompassed by claims 1, 4, and 5 (other than CD2 glycoproteins) may not work. Again, see the Examiner's Answer, page 4, first full paragraph, including the examiner's reliance on Peyrieras, Platt, and Romero. We disagree with this line of reasoning.

That some glycoproteins encompassed by the appealed claims may not work is not sufficient reason to enter a rejection based on the enablement requirement of 35 U.S.C. § 112, first paragraph. As stated in Atlas Powder Co. v. E.I.

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Du Pont DeNemours & Co., 750 F.2d 1569, 1576-77, 224 USPQ 409,  
414 (Fed. Cir. 1984):

Even if some of the claimed combinations were inoperative, the claims are not necessarily invalid. "It is not a function of the claims to specifically exclude . . . possible inoperative substances . . . ." Of course, if the number of inoperative combinations becomes significant, and in effect forces one of ordinary skill in the art to experiment unduly in order to practice the claimed invention, the claims might indeed be invalid. That, however, has not been shown to be the case here. [Citations omitted].

On this record, the examiner has not established that the number of inoperative glycoproteins encompassed by claims 1, 4, and 5 is significant or "in effect forces one of ordinary skill in the art to experiment unduly in order to practice the claimed invention." The examiner sets forth a conclusory statement that "the specification fails to provide guidance as to the appropriate glycoprotein features required for the operation of the system." See the Examiner's Answer, page 4, first full paragraph. That, however, is a bald conclusion not adequately supported by facts. The examiner has not provided, for the record, a fact-based analysis of the specification teachings. We therefore reverse the rejection of claims 1, 4,

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and 5 under 35 U.S.C. § 112, first paragraph, as based on a non-enabling disclosure.

Respecting the rejection of claims 1, 4, and 5 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Jones, Chan, and Fleet, we agree with appellants (amended Appeal Brief, January 24, 1997) that this rejection relies on the impermissible use of hindsight. We therefore reverse the examiner's rejection under 35 U.S.C. § 103.

In conclusion, we do not sustain the prior art rejection or the non-prior art rejection of claims 1, 4, and 5. The examiner's decision rejecting these claims is reversed.

REVERSED

SHERMAN D. WINTERS	)	
Administrative Patent Judge	)	
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	)	
	)	
WILLIAM F. SMITH	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
HUBERT C. LORIN	)	
Administrative Patent Judge	)	



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